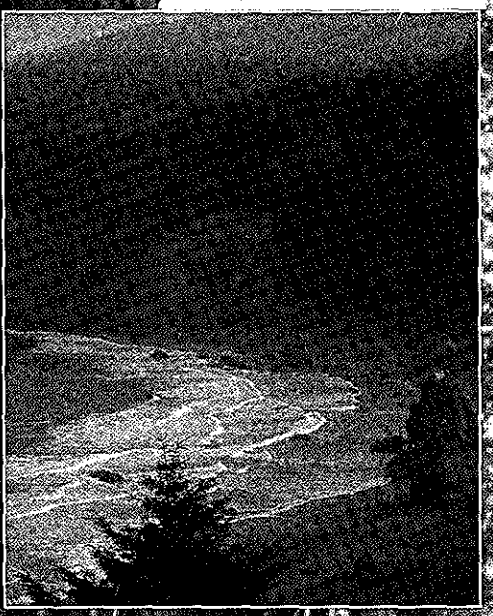

General Management Plan / General Plan

REDWOOD

National and State Parks

Humboldt and Del Norte Counties • California

Approved:

California State Park and Recreation Commission — November 19, 1999

John Reynolds
Regional Director, National Park Service — April 6, 2000

REDWOOD

National and State Parks

Humboldt and Del Norte Counties
California

United States Department of the Interior • National Park Service
California Department of Parks and Recreation

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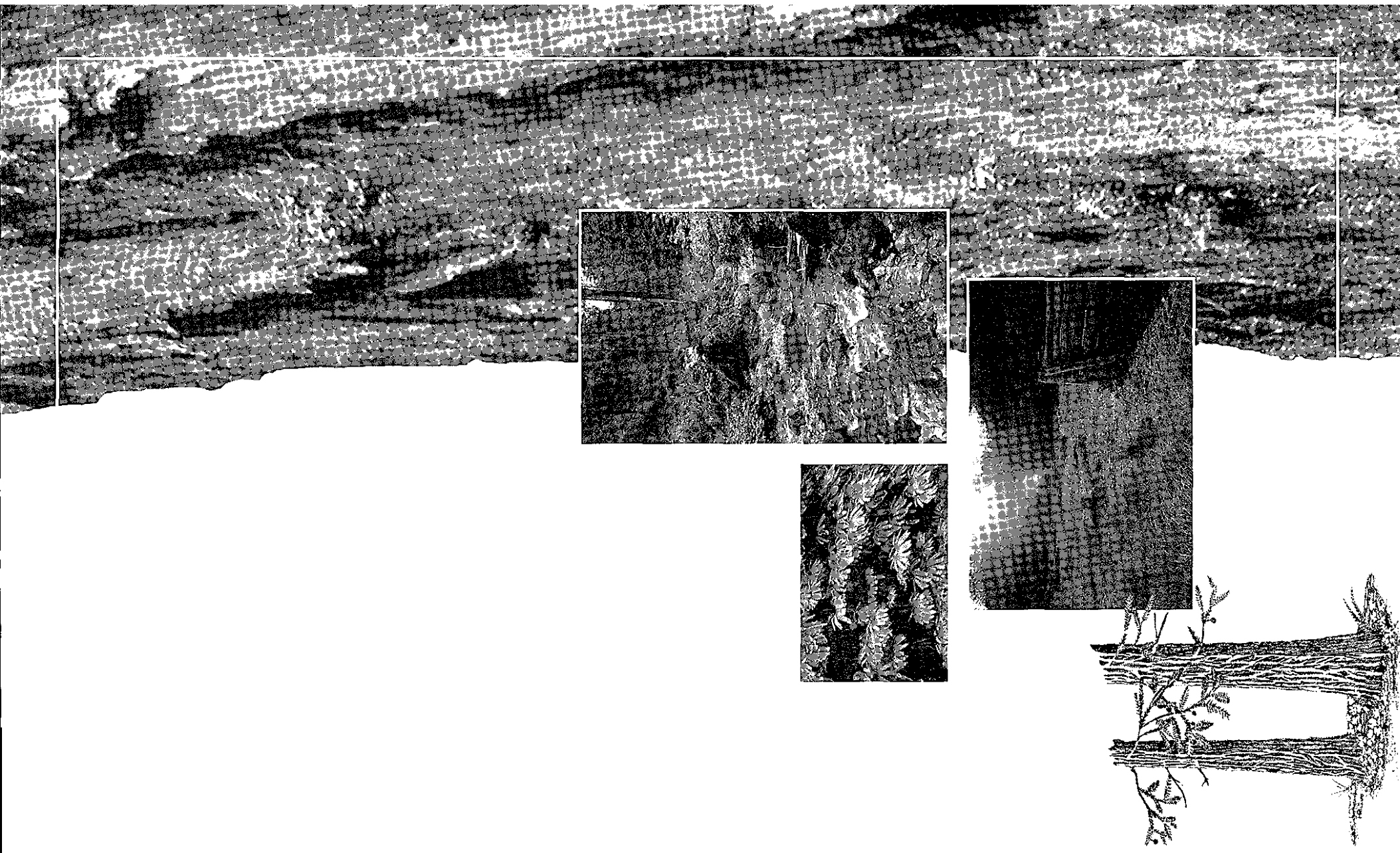

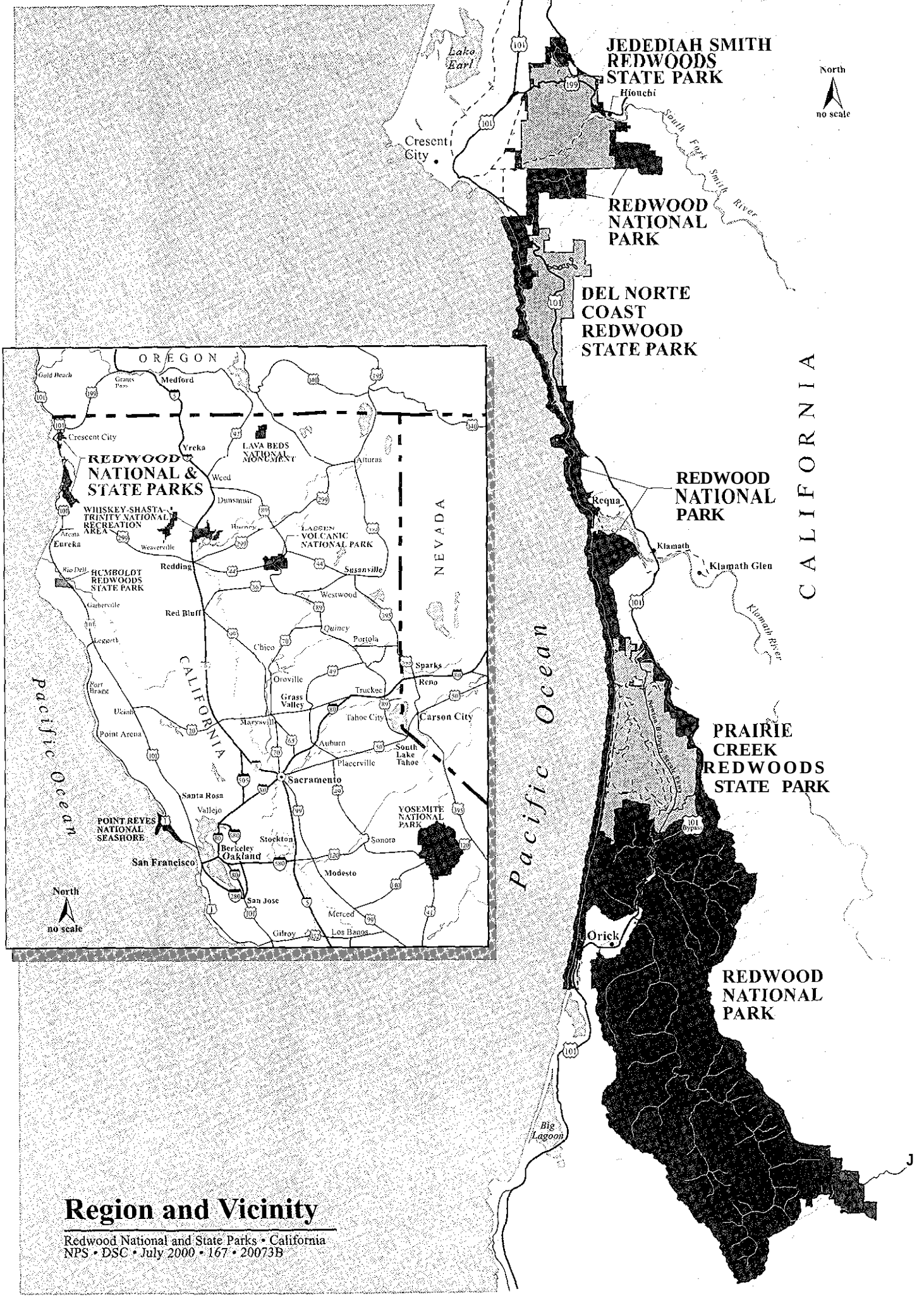

Region and Vicinity

Redwood National and State Parks • California
NPS • DSC • July 2000 • 167 • 20073B

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WHAT IS A GENERAL MANAGEMENT PLAN / GENERAL PLAN?

Redwood National and State Parks in extreme northwestern California consist of four units -— Redwood National Park, which is a federal park under the jurisdiction of the National Park Service (NPS), and three state parks -Prairie Creek Redwoods State Park, Del Norte Coast Redwoods State Park, and Jedediah Smith Redwoods State Park (see Region and Vicinity maps) —- which are under the jurisdiction of the California Department of Parks and Recreation (CDPR). Together these parks, in Del Norte and Humboldt Counties, encompass some 105,516 acres. Guidance is needed for managing the parks. The national park is required to prepare a general management plan; the state parks are required Lo prepare a general plan. The purpose of a joint federal-state plan is to provide a clearly defined, coordinated direction for resource preservation and visitor use and a basic foundation for decision making and managing these four parks for the next 15 to 20 years.

Although the federal requirements for a general management plan differ somewhat from the state requirements for general plans, this joint general management plan / general plan (hereafter referred to as the plan or the management plan) has been developed through cooperative efforts between the federal and state agencies in an effort to manage this complex of parks as a whole. The plan was adopted by NPS leadership and the State Park and Recreation Commission after adequate analysis of the benefits, environmental impacts, and costs of alternative courses of action (see the cost analysis details in appendixes A and B).

The focus of this management plan is on *why* the parks were established and what resource conditions and visitor experiences should be achieved and retained over time. The plan takes a long-range view, which may be many years into the future when dealing with timeframes of natural and cultural processes. The plan considers the parks in their full ecological and cultural contexts -as units of the national and state park systems and as parts of the surrounding ecosystem and region. The connections among the various programs and management zones in the parks are identified, thus helping to avoid the potential for solving problems in one area but creating new problems in another as a result of not fully considering the broader implications of a specific decision.

The management plan constitutes the first phase of tiered planning and decision making. Because this plan is relatively general, more detailed, site-specific analyses of specific proposals in this approved plan will be required before undertaking any additional major federal or state actions.

STATE PARK POLICY DECLARATIONS

The *California Public Resources Code (sec.* 5002.2) requires that state park general plans contain certain elements and declarations. In accordance with that requirement, this plan establishes general management policies for Jedediah Smith Redwoods State Park, Del Norte Coast Redwoods State Park, and Prairie Creek Redwoods State Park. Their classification as state parks by the California State Park and Recreation Commission sets general management policies as provided for in section 5019.53 et seq., *California Public Resources Code:*

> State parks consist of relatively spacious areas of outstanding scenic or natural character, oftentimes also containing significant historical, archeological, ecological, geological, or other such values. The purpose of state parks shall be to preserve outstanding natural, scenic, and cultural values, indigenous aquatic and terrestrial fauna and flora, and the most significant examples of such ecological regions of California as the Sierra Nevada,

northeast volcanic, great valley, coastal strip, Klamath-Siskiyou Mountains, southwest mountains and valleys, redwoods, foothills and low coastal mountains, and desert and desert mountains.

Each state park shall be managed as a composite whole in order to restore, protect, and maintain its native environmental complexes to the extent compatible with the primary purpose for which the park was established.

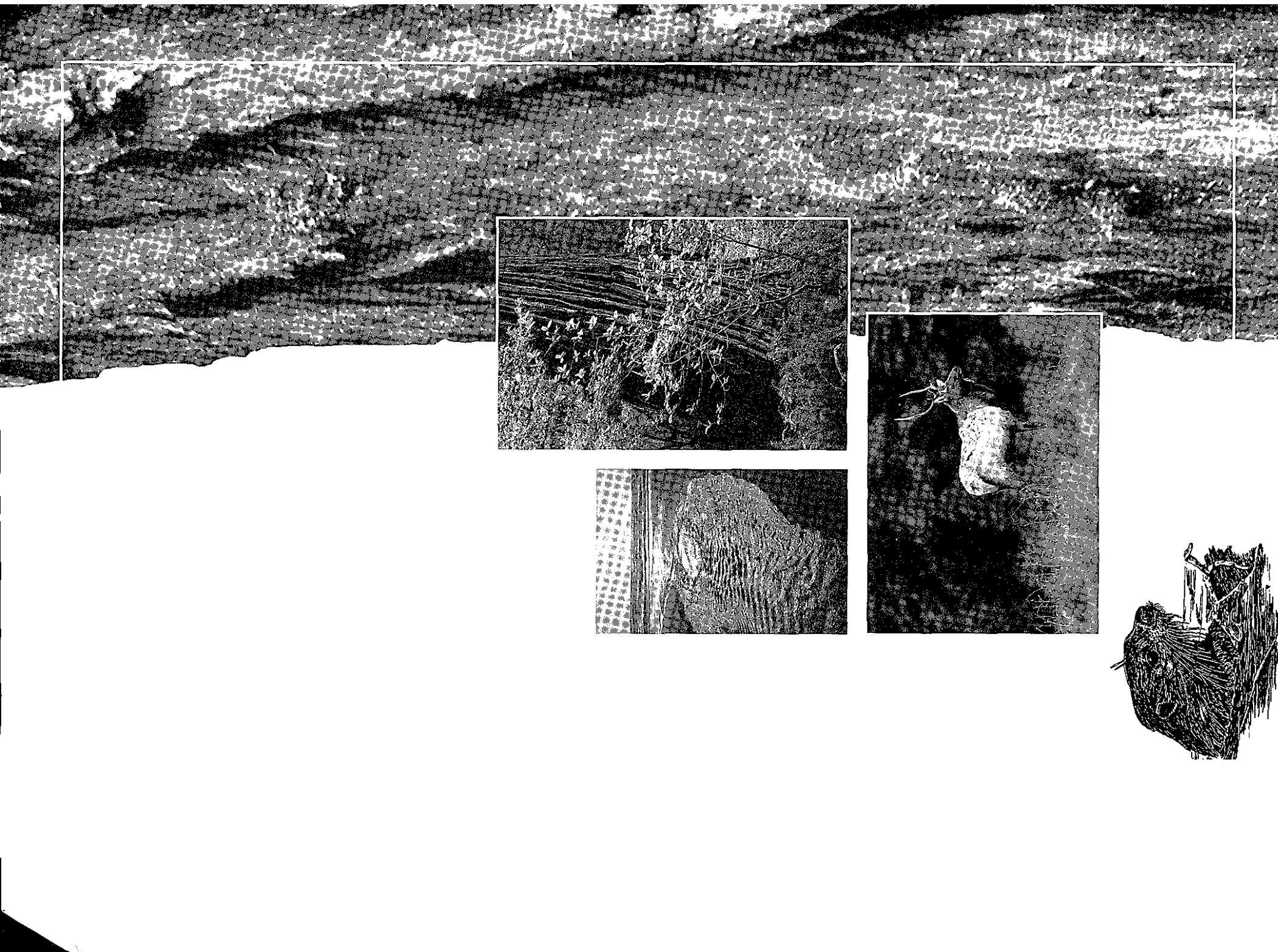
All elements required to be included in state park general plans are contained in this document. The statement of purpose for Redwood National and State Parks as set forth in this joint plan serves as the declared purpose for the three included state parks. The management of Redwood National and State Parks will be consistent with the requirements established for classified state parks. Further, the management zones, goals, strategies, and actions contained in this document serve as resource management policy as well as give general guidance for land use, facilities, concessions, and operation of the state parks as required by law.

PURPOSE OF AND NEED FOR THIS PLAN

The 1980 *General Management Plan* for Redwood National Park assumed that the three state parks, which were already within the congressionally designated national park boundary, would be transferred through donation to the National Park Service. This did not occur, which nullified portions of the 1980 management plan that applied to state park lands and meant that portions of the management plan that applied to state park lands were never implemented. The California Department of Parks and Recreation produced the *State Redwoods Parks, General* Plan in 1985. In 1994 the National Park Service and California Department of Parks and Recreation signed a memorandum of understanding (see appendix C) and agreed to cooperate in managing the four parks to improve the protection of the resources, better serve visitors, and realize fiscal benefits from reducing duplicated services. Both the National Park Service and the California Department of Parks and Recreation agreed that a new management plan was needed to define joint goals and strategies for managing the four parks as a whole and to coordinate the development of facilities and operations.

Significant portions of the parks are within the ancestral territory of the Yurok Tribe and other American Indian groups. Approximately 1,400 acres of land and waters within the Yurok Reservation are federal lands within the parks that are administered by the National Park Service. Although the Yurok Tribe has established a tribal government and a memorandum of understanding exists between the parks and the Yurok Tribe, this plan will help solidify the relationship and promote better understanding and communication.

This joint management plan replaces both the 1980 federal General *Management* Plan and the *1985 State Redwoods Parks, General Plan* for these four parks.



THE PARKS

BRIEF DESCRIPTION OF THE PARKS

The four units of Redwood National and State Parks (RNSP) encompass about 105,516 acres, are about SO miles in length with 35 miles of coastline, and vary in width from 0.5 mile to 8 miles. The legislated national park boundary includes federal and state park lands. RNSP headquarters are in Crescent City, California, which is equidistant (350 miles) from San Francisco, California, and Portland, Oregon. Redwood National Park was established in 1968 and expanded in 1978. Prairie Creek Redwoods State Park was established in 1923, Del Norte Coast Redwoods State Park in 1925, and Jedediab Smith Redwoods State Park in 1929. Some lands within the RNSP boundary are privately owned.

The north-south mostly two-lane U.S. Highway 101 is the main road through the parks, winding its way through forested hills and along the rugged coastline. A 12-mile bypass around Prairie Creek Redwoods State Park was completed in 1992. Three miles northeast of Crescent City, U.S. Highway 199 joins U.S. Highway 101 and provides an east-west route through Jedediab Smith Redwoods State Park. On its western side, the national park boundary extends 0.25 mile beyond the Pacific Ocean's mean high tide line, and the National Park Service exercises jurisdiction over the waters, intertidal lands, and submerged lands. The coastal jurisdiction of state park lands extends 1,000 feet west of the ordinary high-water mark.

Three major river systems and numerous coastal streams traverse the parks. These include portions of Redwood Creek and the Smith and Klamath Rivers. Within the parks, some of the alluvial valleys are relatively flat, with much steeper inner gorges in many of the river valleys. The Smith and Klamath Rivers are part of the federal and state wild and scenic river systems — the federal system since 1981 by congressional action and the state system since 1972 by an act of the state legislature.

BOUNDARY REFERENCES

The legislated Redwood National Park boundary includes national (federal) park lands and three state parks, each with its own boundary (as indicated on the general plan map in this document). Although the goal is to manage these federal and state lands as a single complex of parks, there are times in this document when differentiation between national park land and/or actions and state park land and/or actions becomes important — such as describing statutory authorities or requirements or permitting procedures that apply only to federal lands or state park lands.

For the purposes of this document, then, the term Redwood National and State Parks (RNSP) will be used when referring to state and federal park lands. The terms Redwood National Park, the national park, or national park lands will be references only to federal park lands. References to state parks or state park lands will be to the specific state park or a general reference to the state (CDPR) redwood parks.

Two distinctive physiographic provinces, the coast and the mountains, typify the parks. The 35-mile coastline is mostly rugged, rocky, and difficult to traverse, although there are some grass- and brush-covered rolling slopes. Broad beaches and nearly level uplifted marine terraces characterize the coastal areas around Crescent City. In the central and southern portions of the parks, there are broad alluvial valleys near the mouths of the Klamath River and Redwood Creek. Along the coast of Prairie Creek Redwoods State Park, the S-mile stretch of Gold Bluffs Beach lies at the foot of the nearly vertical Gold Bluffs, rising 100400 feet in height. Offshore there are numerous seastacks that provide habitat for various birds. Inland lie the north-northwest trending mountains of the Coast Ranges. Elevation in the parks varies between sea level to more than 3,000 feet. Rapid tectonic uplift, abundant, intense rainfall, and sheared bedrock make much of the parks highly erodible, deeply incised, and generally rugged. The

average slope in the park ranges between 40% and 70%.

A compilation of basic natural and cultural resource information and maps for the three state redwoods parks can be found in the Inventory of *Features,* which was developed for the 1985 *State Redwoods Parks, General Plan (see* appendix D).

The climate along the coast area is cool and moist, with only minor variations in temperature, and heavy fogs are nearly a daily occurrence during the summer. The densely forested (mostly redwoods and Douglas-fir) Coast Range receives the heaviest rainfall of any area in California — 60–100 inches annually.

The major natural resources are the coast redwood forest ecosystem, the coastline, the rivers, the oak woodlands, and the prairies and their associated plant and wildlife communities. Several species of plants, fish, and birds listed or proposed for listing as threatened or endangered are found in the parks. Critical habitat has been designated or proposed in the parks for some of these species.

The archeology of pre-European settlement within Redwood National and State Parks indicates about a 4,500-year continuous record of habitation extending to after European contact at about 1850. At the time of contact, the Yurok, Tolowa, and Chilula lived along the coast and rivers of what is now Redwood National and State Parks. They were not the only American Indians in northwest California, but they are the three groups that had territories that are now within the parks. There were also strong influences from the greater Northwest Coast Cultural Area to the north. Fish, game, and acorns were particularly significant foods. In addition to villages of wooden plank houses and sweathouses, there were temporary summer camps. Woodworking and basketry were important industries. There was an extensive trade network.

Today, the traditional territories of two American Indian peoples, the Yurok and the Tolowa, include lands now within the parks. The Chilula, whose territory included park lands in the Redwood Creek basin, were almost decimated; those who remained were assimilated by the Hupa to the east of the parks. Since 1978 RNSP staff has held regular consultations with local American Indians and tribal governments about a wide range of issues.

Although Europeans probably sighted the Humboldt coast as early as 1579, there were few sea and overland explorers until much later. In spring 1828 Jedediah Smith led the first overland party to penetrate the mountains of interior northwest California and traversed what is now the parks, reaching the coast near Crescent City before turning northward. In 1848 gold was discovered in the upper Trinity River area. American Indians were displaced by the incoming miners, and reservations were established.

A number of coastal towns were established as supply centers for the gold miners. Trails following routes established by the Indians led to the mines. Farmers and ranchers were soon attracted to the north coast. Commercial fisheries were established in the last quarter of the 19th century, and the dairy industry also became important. Toward the end of the 19th century, the timber industry was established in the area. This ended the era of economic self-sufficiency, because products were destined for the world beyond California.

Tourism became important to the economic base of the north coast region after the Old Redwood Highway (now portions of Highway 101) was completed in 1923. Construction of this highway coincided with the 1918 establishment of the Save-the-Redwoods League, a significant event in the history of conservation, not only along the north coast but also nationally. Prairie Creek, Jedediah Smith, and Del Norte Coast Redwoods State Parks were set aside as tree preserves in the 1920s. Significant development for visitor use in these parks was undertaken by the Civilian Conservation Corps in the 1930s.

In 1963 the National Park Service conducted a special study of the California coast redwoods. Five years later the 58,000-acre Redwood

National Park was established; it was expanded in 1978 to about 105,516 acres, which includes CDPR lands in the state parks.

PURPOSE OF THE PARKS — WHY THEY WERE SET ASIDE

> *The reason(s) for which the parks were established provides the most fundamental criterion for determining the appropriateness of actions set forth in this plan.*

Through federal statutes and declarations of purpose, the U.S. Congress and the California Park and Recreation Commission, respectively, have established the individual purposes of the four parks that make up Redwood National and State Parks. These purposes are as follows:

♦ Redwood **National Park** was established "to preserve significant examples of the primeval coastal redwood *(Sequoia sempervirens)* forests and the streams and seashores with which they are associated, for purposes of public inspiration, enjoyment, and scientific study, there is hereby established a Redwood National Park in Del Norte and Humboldt Counties, California." (Public Law 90-545, October 2, 1968)

[I]n order to protect existing irreplaceable Redwood National Park resources from damaging upslope and upstream land uses, to provide a land base sufficient to insure preservation of significant examples of the coastal redwood in accordance with the original intent of Congress, and to establish a more meaningful Redwood National Park for the use and enjoyment of visitors. (PL 95-250, March 27, 1978)

♦ The purpose of **Jedediah Smith Redwoods** State Park is to make available to people forever, for their inspiration and enjoyment, in a condition of unimpaired ecological integrity, the great forests of lower Mill Creek and of the Smith River, together with all related scenic, historic, scientific, and recreational values and resources of the area. (July 1965 State Park and Recreation Commission Declaration of Purpose)

***Del** Norte **Coast Redwoods State Park** is established "to make available to the people, for their inspiration and enjoyment forever, the scenic grandeur of the coast of Del Norte County from False Klamath Cove northward to Crescent Beach, where the coast redwood forest uniquely clothes the slopes directly facing the ocean; embracing also the important inland forests within the drainage of Mill Creek, adjoining Jedediah Smith Redwoods State Park; together with all scenic, historic, scientific, and recreational values and resources of the area." (November 1964 State Park and Recreation Commission Declaration of Purpose)

♦ The purpose of **Prairie Creek Redwoods State Park** is to "make available to people forever, for their inspiration and enjoyment, in a condition of unimpaired ecological integrity, the great forests of Prairie Creek Basin and adjacent areas west to the sea, including the wide ocean beach; together with all related scenic, historic, scientific, and recreational values and resources of the area." (July 1963 State Park and Recreation Commission Declaration of Purpose)

Based on these individual statements of purpose, the National Park Service and the California Department of Parks and Recreation have developed administratively the following statement of purpose to provide general guidance to the management of the complex of four parks that comprise Redwood National and State Parks:

♦ **Redwood National and State Parks** were established to preserve significant examples of the primeval coastal redwood forests and the prairies, streams, seashore, and woodlands with which they are associated for purposes of public inspiration, enjoyment, and scientific study, and to preserve all related scenic, historical, and recreational values.

SIGNIFICANCE OF THE PARKS — WHY THEY ARE SPECIAL AND IMPORTANT

The following statements define the significant attributes that relate to the parks' purpose and why the parks were established. Knowing the parks' significance helps managers set protection priorities and determine desirable visitor experiences.

♦ Redwood National and State Parks preserve the largest remaining contiguous section of ancient coast redwood forest. This ecosystem includes some of the world's tallest and oldest trees, and it is renowned for its biotic diversity and inspirational atmosphere. The forest community includes a number of rare and endangered species, dependent on the integrity of the whole for their survival.

♦ More than one-third of the lands within the parks have been heavily impacted by timber harvest and are the subject of an internationally recognized restoration program designed to restore integrity and recover lost values. Erosion related to logging roads is being reduced, natural topography is being restored to hillslopes crossed by roads, and topsoil is being returned to the surface to speed revegetation and retain genetic integrity of the vegetation.

♦ Redwood National and State Parks are near the junction of three active tectonic plates of the earth's crust. Steep, highly erodible landscapes and frequent earthquakes characterize the region and are all related to the geologic forces generated *at* plate boundaries. These forces influence not only the natural characteristics of the parks, but human use and habitation as well.

♦ Redwood National and State Parks contain a rich variety of biotic communities from the Pacific Coast to the interior mountains. The mosaic of habitats within the parks includes old-growth forests, prairies, oak woodlands, and riverine, coastal, littoral, and near-shore marine environments. These habitats are increasingly important refugia for rare and endangered species.

♦ Redwood National and State Parks contain 35 miles of scenic Pacific Ocean coastline and about 1 05,5 16 acres of coastal topography. The heavy rainfall and powerful rivers are part of the intricate and dynamic hydrologic system. This system, which includes portions of the watersheds of Redwood Creek, the Klamath River, and the Smith River as well as the Pacific Ocean, provides a rich diversity of aquatic and riparian habitats. The Klamath and Smith Rivers are designated federal and state wild and scenic rivers.

♦ Redwood National and State Parks preserve the legacy of 19th and 20th century conservation efforts that led to the establishment of three state parks in the 1920s, a national park in 1968, and an expansion of the national park in 1978. These federal and state lands are cooperatively managed to ensure the highest level of resource protection and visitor enjoyment. United Nations world heritage and international biosphere reserve status was granted in the 1980s.

♦ Four American Indian cultures with ties to Redwood National and State Park lands-the Tolowa, Yurok, Chilula, and Hupa peoples — represent a diverse indigenous presence. These groups maintain traditional lifeways, including arts, ceremonies, and methods of subsistence as well as three distinct languages. The archeological record of these peoples, extending back more than 4,500 years on RNSP lands, includes sites listed on the National Register of Historic Places. These resources are especially important because of their direct association with contemporary American Indian communities, who continue to rely on these resources for their spiritual, cultural, physical, and economic sustenance.

♦ RNSP landscapes represent more than 150 years of land use practices by non-Indian peoples, including exploration, mining, fishing, ranching, timber cutting, and settlement. Some historic structures, roads, trails, and railroad beds remain. Logging practices were developed here that permitted the cutting of timber on an unprecedented scale. The intensity of logging

spurred an environmental movement. The debate about land ethics continues today.

INTERPRETIVE THEMES — WHAT VISITORS SHOULD KNOW

Based on the parks' purpose, significance, and primary resources, the following primary interpretive themes are those ideas about RNSP resources that are so important that every visitor should have the opportunity to understand them. The primary themes below cover those ideas that are critical to a visitor's understanding of the parks' significance. (They are not a comprehensive list of everything there is to interpret in the parks.)

♦ The ancient coast redwood ecosystem preserved in Redwood National and State Parks protects some of the world's most majestic forests and is home to an interrelated biotic community. The coast redwood, a species that has produced some of the world's tallest individual trees, is well adapted to the environmental conditions of its range.

♦ The mosaic of habitats within Redwood National and State Parks, which includes ancient forest, prairies, oak woodlands, and coastal and near-shore marine environments, provides increasingly important refugia for a number of rare and endangered species.

♦ Steep, highly erodible landscapes and frequent earthquakes are related to local geologic forces generated near the junction of the three tectonic plates of the earth's crust that underlie the region.

♦ The Yurok, Tolowa, and Chilula Indians historically lived on lands now included in Redwood National and State Parks. The Chilula Indians were later assimilated into the inland Hupa culture, east of the parks. The diverse traditional lifeways of these indigenous groups continue today.

♦ Attracted by the diverse natural resources of the northern California coast, residents developed a number of industries including mining, farming, ranching, fishing, and logging.

♦ Redwood National and State Parks preserve the living legacy of 19th and 20th century conservation efforts, which helped spur a worldwide environmental movement and set aside diminishing redwood forests as parks, parks that now provide a testing ground for cooperative management and large-scale restoration of severely impacted forest lands.

PARKS' GOALS

Given the purpose, significance, and what visitors should have the opportunity to learn, goals were developed to provide guidance in preserving and protecting what is significant and communicating the primary themes to the visitor. These broad, conceptual goals focus on results and desired future conditions, not on efforts or actions. From these goals flow the management strategies and specific actions of the plan.

The goals, management strategies, and specific actions, together with the management zones, provide parkwide guidance for all programs, activities, and locations throughout the parks. The more specific management strategies are described in "The Plan" section according to specific topics (natural resource management, cultural resource management, education and interpretation, etc.). Please see those sections for the listings of management strategies.

Preserve and Protect the Parks' Resources

The natural and cultural resources of the parks are preserved and protected.

Lands, ecosystems, and processes that have been altered by modem human activities are restored or replicated.

Redwood National and State Parks serve as a laboratory for scientific study and research that promotes preservation, restoration, and understanding of the parks' resources. Management decisions about resources and visitor use are based on and supported by adequate scientific information.

Provide for the Public Enjoyment and Visitor Appreciation of the Parks

RNSP visitors and the general public experience, understand, and appreciate the parks' resources, and support their preservation.

RNSP visitors and the general public understand the significance of American Indian cultures in the history of the region and their historic and contemporary ties to park lands.

Visitors are satisfied with the availability, accessibility, diversity, and quality of RNSP facilities, services, and appropriate recreational opportunities.

Visitors experience the parks in a safe manner.

RNSP facilities serve ongoing needs and demands, are sustainably designed and constructed (see glossary), and are appropriately located and maintained.

Maintain Collaborative Relationships with Gateway Communities and Local American Indian Tribes

Relationships with gateway communities are founded in cooperation. Joint efforts are directed toward developing/strengthening facilities, services, and information delivery systems that facilitate public access to and appreciation for the resources and values of the parks and the surrounding region and that also enhance the economic well-being of local communities.

Formal government-to-government relationships with local American Indian tribes are based on applicable laws and regulations. Collaborative relationships are based on mutual interests in managing and protecting the lands, waters, and other resources within the parks and are guided by an understanding of and respect for the tribes' geographic, economic, and cultural ties to the parks' resources and values.

ISSUES AND CONCERNS

Having at least *a broad understanding of why the parks have been set aside, what resources are significant, what the public should have the opportunity to learn, and what are the goals for the parks, managers can look at conditions and determine what the obstacles are to achieving those goals.*

The issues and concerns are listed in the "The Plan" section according to specific topics (natural resource management, cultural resource management. education and interpretation, etc.). Please see that section for a discussion of the issues.

ISSUES BEYOND THE SCOPE OF THE JOINT PLAN

Other issues and concerns that were raised during the public involvement process were considered beyond the scope of this plan. Many of these issues are covered under existing more detailed planning documents or will be resolved in more detailed future planning that will tier off this plan.

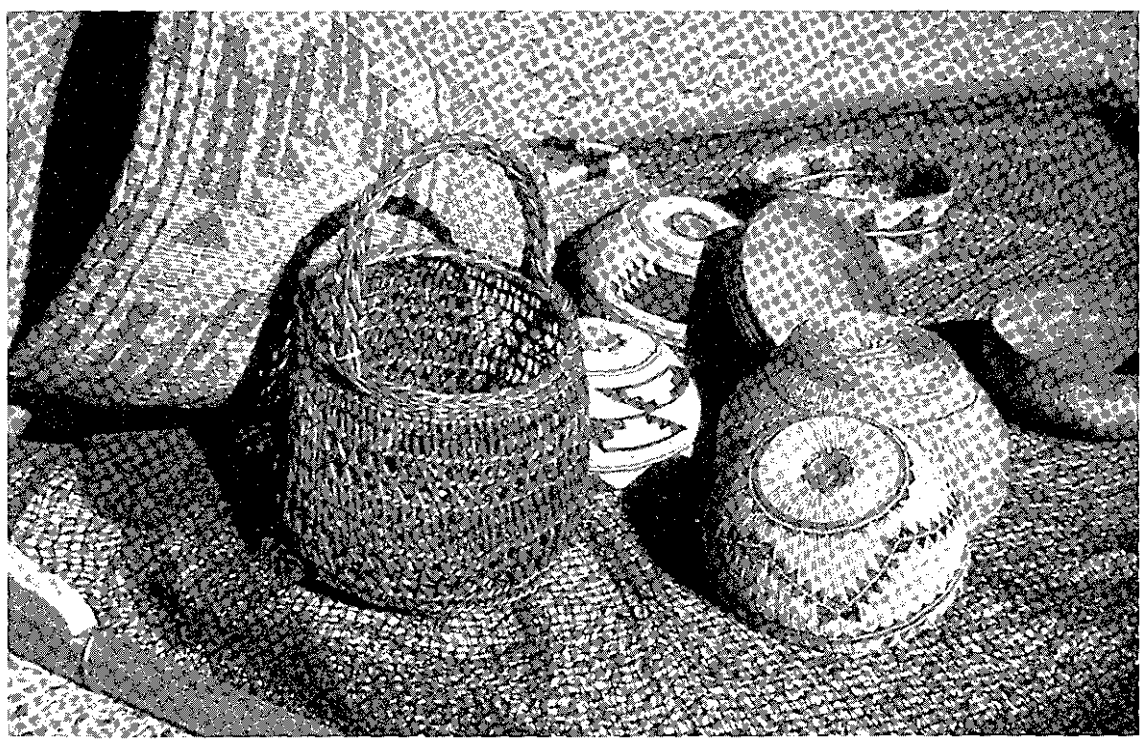
- Develop one or more transportation hubs.
- Provide shuttle service to various locations.
- Provide more frequent bus service.
- Develop management policies to resolve human/wildlife conflicts with mountain lions, elk, and other animals.

♦ Protect and restore natural dune communities
♦ Review policy for allowing dogs on hiking trails.
♦ Explore better management practices with respect to dead and downed wood collection.

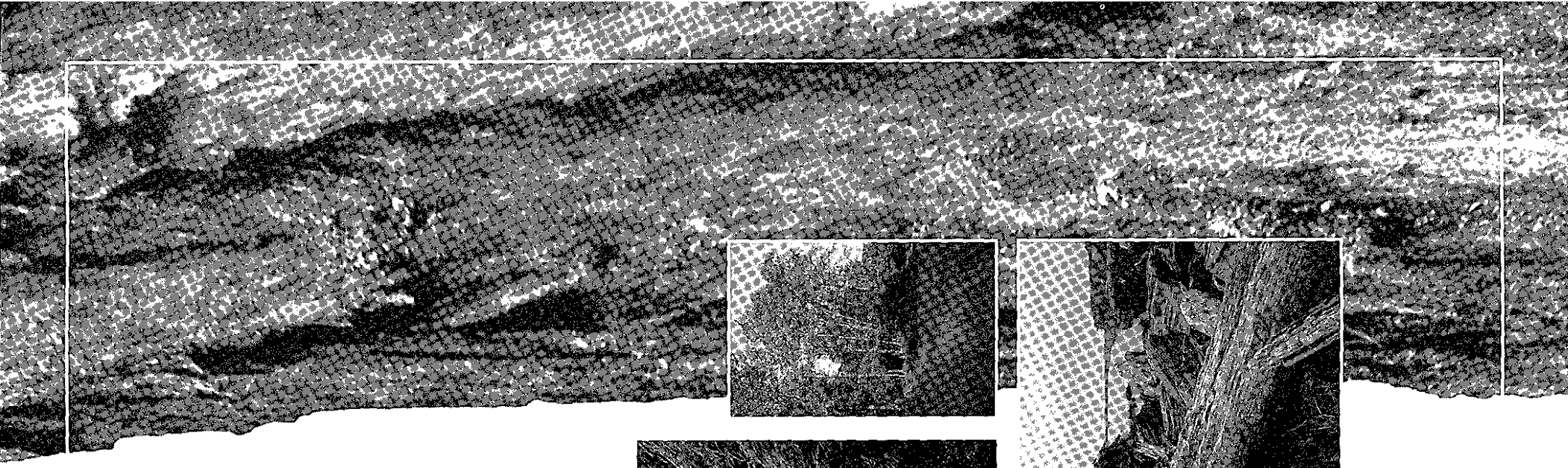
Other issues and concerns were inappropriate given the legislative or policy mandates for the state parks or the National Park Service.

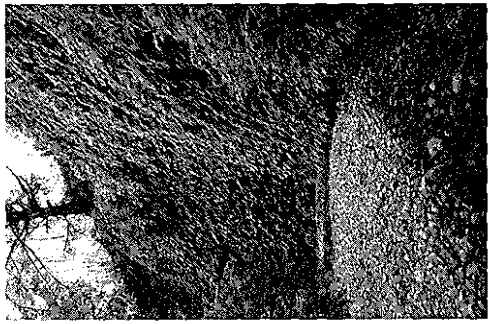
♦ Manage Redwood Creek basin as a wilderness.
♦ Realign Highway 101 to improve the visitor experience.
♦ Remove trees along the highway so visitors can see the coast from more locations.

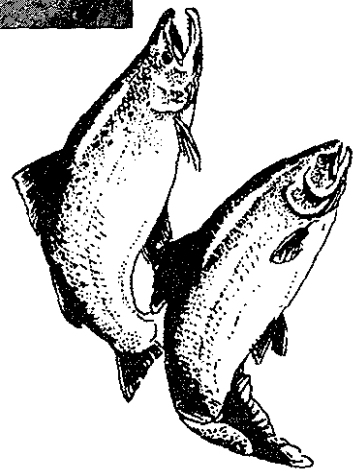
Also, the Yurok tribe expressed an interest in reestablishing traditional hunting activities on its ancestral lands within the parks. However, given that hunting in parks is prohibited by both federal and state laws, hunting is not discussed in this document.



Traditional baskets made by American Indians associated with the parks







BACKGROUND FOR THE PLAN

DISTURBED LANDS

Past Commercial Logging and Park Expansion

Before 1978 much commercial logging and associated road building were done just upstream and upslope of the 1968 park lands. More than 38,000 acres (70%) of the expansion area added to the park in 1978 (in the Redwood Creek watershed) had already been logged. In timber harvest areas, road networks are the primary source of erosion. There were 415 miles of abandoned logging roads and 3,000 miles of skid roads in these cutover areas (see the Roads in Redwood Creek Basin map). The 1978 park expansion (PL 95-250) came about because of this extensive logging. The logging roads and post-logging exposed slopes were prone to erosion, and over time massive amounts of the eroded sediment washed into Redwood Creek and its tributaries in the national park.

The increased sediment caused the water in the creeks and tributaries to rise, eroding the streambanks and stream channel -carrying away soil that shallow-rooted streamside redwoods needed to keep them upright. The redwoods were being directly impacted and threatened by upstream logging outside the park, and in the early 1970s environmentalists were alarmed at the large trees that were falling because of the undermining erosion. The 1978 expansion (about 48,000 acres) increased the amount of federal/national park land along the Redwood Creek corridor, protecting more lands near the creek and its tributaries from logging, and included more land upslope within the national park so that it also would be protected from logging. The additional lands in this expansion area were logged (cutover) lands that will require extensive and expensive rehabilitation, a situation that was uncommon for national park system lands.

The initial watershed restoration (rehabilitation) program in the 1980s in the national park focused on erosion control efforts through road removal and removing till from streams, and 190 miles of roads have been removed with these techniques. Over time, assessment of the restoration methods has resulted in improved treatments. The emphasis is now on watershed restoration rather than just road removal. The restoration goal is to restore watersheds to conditions that would have existed before logging occurred. For more information please see the discussion of erosion in the "Natural Resources" chapter of the "Affected Environment" in the *Final General Management Plan /General Plan /Environmental Impact Statement/Environmental Report.*

How Does Logging outside the Parks Affect Trees inside the Parks, Miles Away?

Erosion, a natural process, is yielding unnatural amounts of sediment into streams. Roads built to transport harvested trees are prone to erosion. There is some evidence that the brush cover and canopy of trees removed by logging no longer function to protect soils from erosion, although this source of sediment has decreased within the parks as vegetation has regrown. Through time, the sediment eroding from the slopes and roads washes into creeks and tributaries and moves downstream. Sediment fills the stream channels and they become shallower and wider. Trees that were growing near or on the banks — streamside environments are the places redwoods prefer and where they grow the **best** and the tallest — arc now closer to the banks or even in the water. The soil around and under the relatively shallow redwood roots erodes, especially during floods. The wind can more easily topple the trees when soils arc eroded from around the roots.

Tree roots must have ample oxygen for survival. The deposition of coarse sediment originating upstream results in moisture draining away from **the** roots, robbing them of oxygen held in the water. Streamside redwood and Douglas-fir cannot survive.

Past Logging in Old Growth

Old-growth redwood is significantly larger and heavier than other commercial timber species, and it requires bigger yarding (moving of trees from the point of felling to a landing where felled trees are concentrated before loading on trucks for transport to market) and hauling equipment. The result is large-scale land disturbance. At the time when much of what is now the national park was harvested, old-growth timber was still abundant, and much of the lower quality or less marketable wood was left where it fell, used to cushion the fall of other redwoods or to construct stream crossings in place of culverts. Some of these practices are not allowed under the state's current *Forest Practice Rules.*

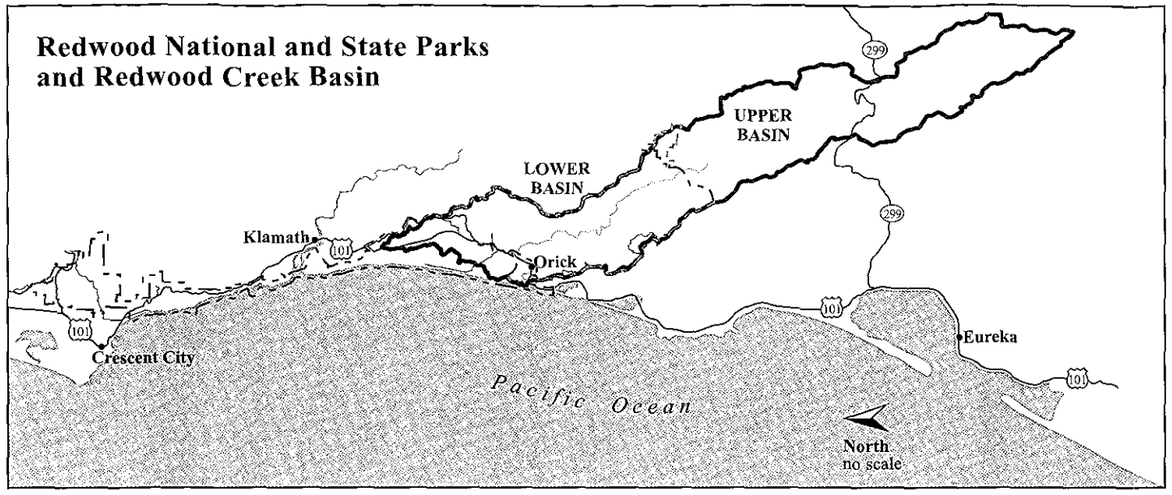
The logging haul roads in the parks are 30-50 feet wide, closely spaced cut-and-fill roads; many are well armored with *gravel or* crushed rock. They were commonly used by "off highway" trucks, which carried much larger loads than those allowed on public roads. To minimize yarding distances, large landings (50-100 feet wide and long) that were used to stockpile and load logs onto trucks were frequently spaced along the haul roads. Many of the drainage structures installed along these old haul roads would not be allowed today. Most of the larger streams had culverts, but often there were logs, other woody debris, and fill placed in the channel beneath the culvert to reduce the length of culvert needed. Many culverts are undersized for a 50-year-return-interval storm Where streams needed to be crossed, typically logs and other woody debris were placed in the channel, and then soil was pushed in on top, creating a Humboldt crossing. Some stream crossings had no drainage structures at all.

In tractor yarded *areas,* bulldozers were used to pull the logs of the individual trees to the landings on the haul roads; the routes they carved by cutting and filling are known as skid roads. Where a route was used repeatedly, or even just once with several old-growth logs dragging behind the bulldozer, the skid roads could become as wide as the smaller haul roads.

Layouts (beds onto which trees are felled) are unique to old-growth redwood logging. Old-growth redwood trees are very brittle and, to minimize breakage during falling, layouts are constructed for as many trees as possible. Before powerful bulldozers were developed in the late 1940s, or in cable-yarded areas, these beds were made of other less valuable trees. During the period when most of the parklands were logged, tractor yarding predominated and, in those areas, bulldozers were used to create the layouts. They were cut into the hillslopes, like *a* road, in whatever direction was most favorable for felling the tree. They are typically the width of a large bulldozer's blade (-15 feet) and the length of the tree's height (ZOO to 350+ feet), and they have a straight, even grade.

Where convenient, layouts might be later used as roads, and roads were sometimes made into layouts, only to be used as a skid road again. It is often difficult to distinguish between layouts and skid roads or between haul and skid roads. There are no consistent distinctions between the various uses of the roads/hillslope cuts that can be made simply in terms of their width. However, they all disrupt the natural drainage network.

As a consequence of the immense size and weight of the redwood timber and the equipment used to remove it, there has been a large amount of ground disturbance on the parks' logged lands, especially in those *areas* that *were* tractor-yarded. Ground disturbance to the hillslopes from cable yarding is significantly less because bulldozers were not used to cut layouts and skid roads and drag out the logs. Instead, a cable *system* was set up at the landings, the fall of the tree was cushioned by other trees or uphill falling, and then the logs were dragged to the landings using the cables. Because most of the parks' logged lands were tractor-yarded clear-cuts, the degree of disturbance is much greater than would be found in cable-yarded areas.



UPPER BASIN

LOWER BASIN

299

101

Park Protection Zone

Road Network

Redwood Creek

BOUNDARIES

Legislated Redwood National Park Boundary

Redwood Creek Basin Boundary

Boundary of National Park Land
Acquired after Legislated Expansion of 1978

Prairie Creek Redwood
State Park

101 Bypass

Redwood Creek

To Klamath

Newton B. Drury Scenic Pkwy.

Orick

To Eureka

Pacific Ocean

North

0 .5 1 2 3 4 Miles

Roads in the Redwood Creek Basin

Redwood National and State Parks • California
NPS • DSC • July 2000 • 167 • 20074B

THE PARK PROTECTION ZONE

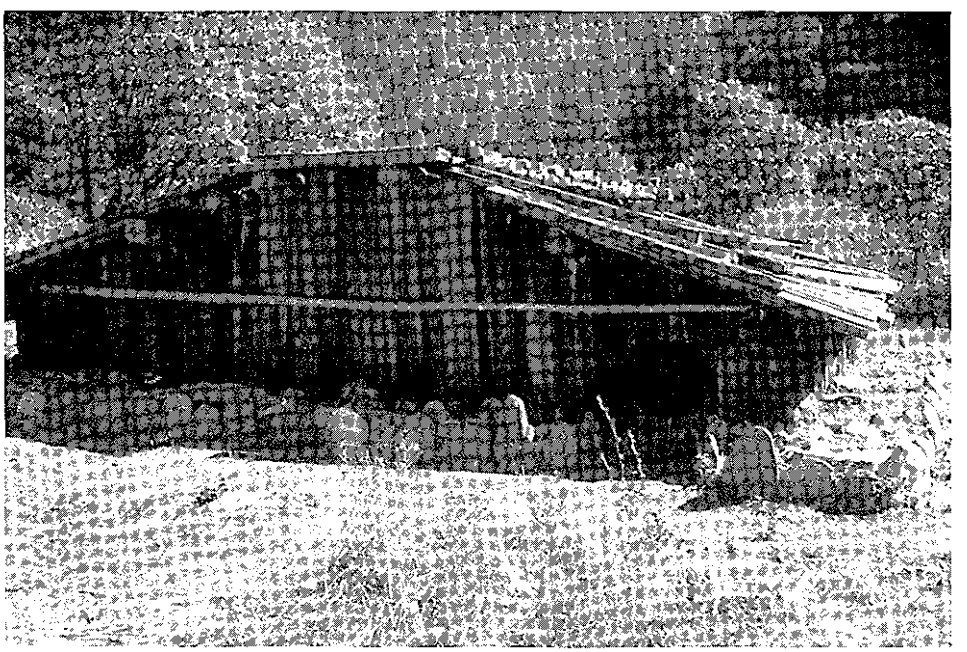
A separate park protection zone (PPZ), a zone of about 33,000 acres of private land immediately upstream and upslope from the national park boundary, was also established as part of the 1978 expansion of the park (PL 95-250). RNSP staff has more review authority over plans for timber harvest in the park protection zone than in areas upstream from this zone. For example, the California Department of Forestry has always allowed RNSP staff to participate in preharvest inspections on PPZ lands. However, on private lands further upstream, the California Department of Forestry allows the landowner(s) to determine whether RNSP staff participate in these inspections.

A DEFINITION OF TERMS

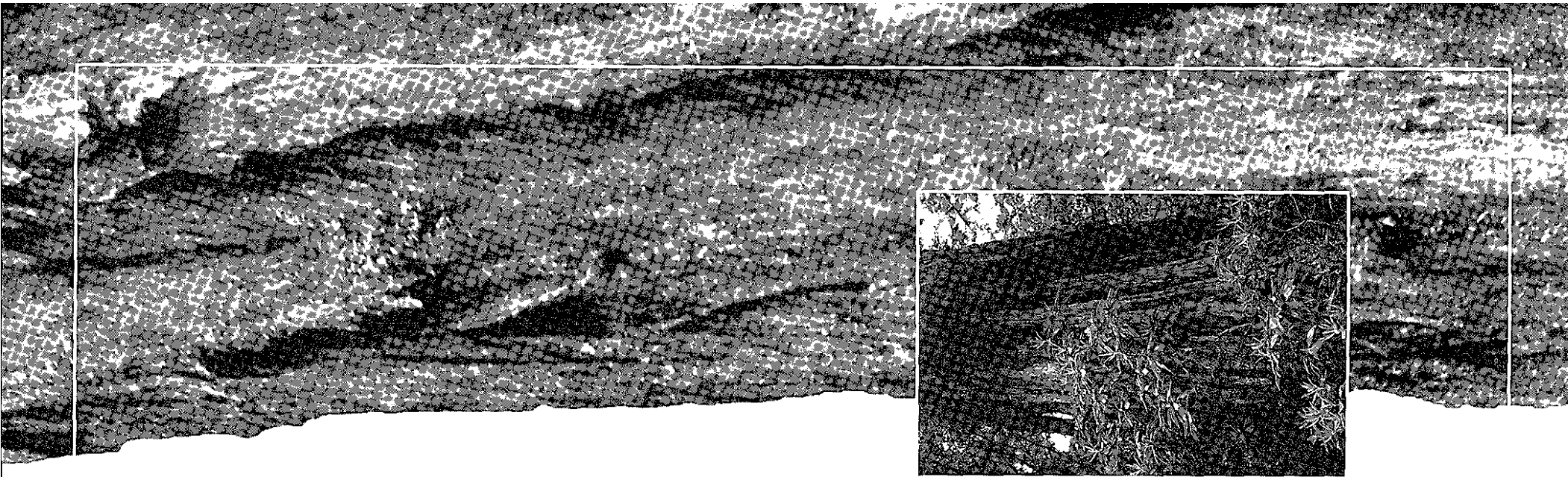
A glossary of terms that are used in this document can be found just before the "Selected References" section at the end of this document. However, it may be helpful here to provide an understanding of the use of "sensitive resources" and "sensitive areas" in this document.

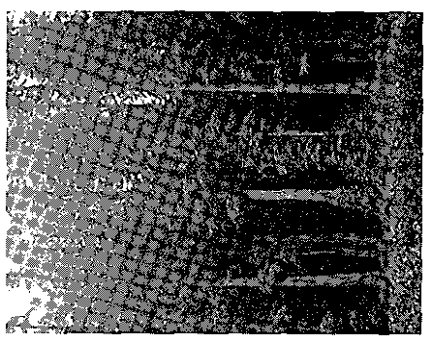
"Sensitive Resources" or "Sensitive Areas"

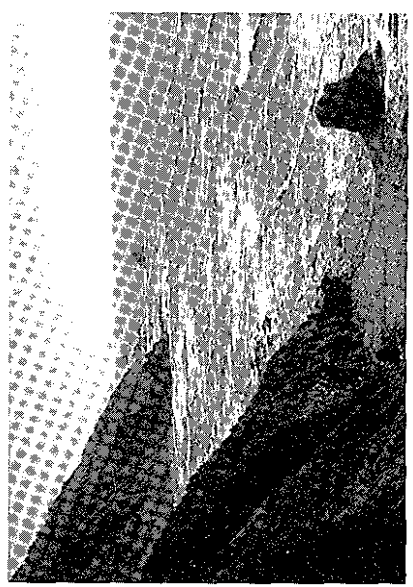
The terms sensitive resources and sensitive areas are used throughout this document. Sensitive resources are resources that are specifically protected by law, regulation, guideline, policy, or executive order; or resources that are easily damaged by use; or resources that are rare or unique in the parks and the region. The most common examples of sensitive resources or sensitive areas in the parks are the old-growth redwoods, the wetlands, the prairies, threatened and endangered species and their habitat, and cultural resources including archeological sites, ethnographic sites, and sites that are of importance to American Indians. Rather than repeat this list, these resources are referred to as sensitive resources or sensitive areas throughout the document.

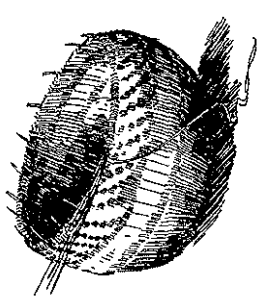


Traditional Yurok dwelling made from split redwood logs. NPS photo









THE PLAN

CONCEPT

Under the approved plan, the agencies will emphasize the protection of the parks' resources and values and will also provide a variety of opportunities for visitors to enjoy the parks' natural and cultural resources. In-depth interpretation will be provided both in facilities and onsite. Orientation will help visitors easily access both facility-based and resource-based interpretation and visitor opportunities. Major developments will be focused along U.S. Highways 101 and 199. However, new uses and facilities to enhance visitor experiences in sensitive resource areas of the parks will be required to be low impact. New visitor services and facilities in other areas of the parks will be provided to enhance visitor experiences if the services and facilities do not impact sensitive resources.

See appendixes A and B for costs for implementing the plan. Also, the General Plan map, at the end of this description of the plan, provides a visual summary of the major plan actions according to geographic locations.

MANAGEMENT ZONES

Management zones provide future guidance in managing areas of the parks for which there currently are no issues or action statements.

The parks are a mosaic of resources that are influenced by a variety of factors, including natural forces, how and when visitors use these resources, and how easily the resources can be changed by management activities and visitor use. Management zoning is a tool that is used to identify how different pieces of the mosaic will be managed to achieve the overall goal of the plan and the desired conditions in each zone. A particular combination of physical, biological, social, and management conditions is specified for each management zone. To achieve these conditions, different types and levels of use, management, and facilities are allowed in each management zone.

Nine zones are described (see appendix E) that apply to the approved plan. Five zones cover most of the parks — the development zone, the frontcountry zone, the two backcountry zones, and the primitive zone. The separate Bald Hills zone allows management of the complex interplay between the natural and cultural history of this area. A cultural resource zone, a transportation zone with two subzones, and a marine management zone cover the remaining portions of the parks.

Activities and facilities allowed in more restrictive zones, such as the primitive or backcountry zones, will also be allowed in less restrictive zones, such as the frontcountry or developed zones, but not vice versa. Not all activities or facilities allowed in a zone will be expected in all portions of a zone. For example, utility corridors are allowed in developed, frontcountry, and transportation zones, but not all of these zones contain utility corridors.

Visitors in areas near the edges of the more restrictive backcountry and primitive zones that are near higher use zones will have fewer opportunities for solitude. For example, the interior of the backcountry zone and the portion of the backcountry zone that borders a primitive zone will be expected to provide greater opportunities for solitude than the edge of the backcountry zone adjacent to a frontcountry zone.

Areas zoned backcountry nonmechanized and primitive within the three state redwoods parks that are of sufficient size have been approved by the California State Park and Recreation Commission for classification as state wilderness in accordance with the state's *Public Resources Code.*